WSDOT Biologists

The primary goal of the Washington State Department of Transportation (WSDOT) is to provide safe, efficient, dependable and environmentally responsible transportation facilities and services. The need to provide transportation for the state requires that WSDOT assume the role of developer. As a developer, the Department must obtain permits from federal, state and local agencies when projects pass through sensitive areas, such as wetlands or stream corridors. As a state agency, WSDOT is committed to preserving, protecting and enhancing the state's natural resources. The biologists who work for WSDOT assist the agency in both of these important roles.

Agency biologists are located in several WSDOT regions, as well as at the Olympia Service Center (OSC). OSC biologists serve as an "on-call" resource to the regions. WSDOT biologists are involved in all stages of project development, from early planning to long-term maintenance activities. Some of the tasks WSDOT biologists are frequently involved in include project impact assessment, wetland inventories, wetland delineations, stream surveys, biological assessments for threatened and endangered plant or animal species, wetland mitigation planning and design, wetland mitigation monitoring, mitigation banking, fish passage assessment and enhancement, maintenance and evaluation of wildlife mortality data, environmental research, interagency coordination and training.

What WSDOT Biologists Do

- **Project Impact Assessment**

As transportation projects are planned and designed, a biologist evaluates the potential for adverse impacts to natural resources. If a potential impact is identified, field work is completed to determine the nature of the resource and recommend ways to avoid or minimize impacts. The most common assessments are wetland inventories, wetland delineations, stream surveys and assessments for threatened and endangered species.

- **Wetland Inventories**

To conduct a wetland inventory, a biologist visits the project area and identifies all wetlands within the project area. Generalized maps and wetland descriptions are then provided to the design team so that wetland impacts can be avoided or minimized to the extent possible during the project design phase.

- **Wetland Delineations**

During the final phase of project design, all wetlands that will be impacted are delineated by a biologist. Wetland delineation involves detailed data collection for plants, soils and water. This information allows the biologist to identify and mark the jurisdictional boundaries of the wetland.

- **Stream Surveys**

Streams within a project area are classified and described as necessary, paying particular attention to the characteristics relevant to salmon habitat. In some cases, a detailed analysis of fish populations is prepared.

- **Biological Assessment of T&E Species**

A biological assessment is required when threatened and endangered (T&E) animals or plants are suspected to occur in the vicinity of a project. A biologist inventories the project area for T&E species or habitats and reports the potential

for adverse impacts to the U.S. Fish and Wildlife Service. Mitigating measures are suggested where appropriate.

- **Wetland Mitigation Planning & Design**

When wetlands are adversely impacted by transportation projects, WSDOT compensates by restoring, enhancing, or creating wetlands. A disturbed site near the project is often used for the compensatory mitigation. Biologists work with landscape architects and other specialists to analyze the site and develop grading and planting plans to enhance its wetland characteristics. After review and approval of a mitigation plan by the resource agencies, the replacement wetland is built.

- **Wetland Mitigation Monitoring**

Monitoring takes place once construction of a mitigation site is complete. The biologist typically follows a detailed sampling protocol, including collection of data on vegetation, water quality, wildlife, aquatic invertebrates and soils at each site. An analysis of the data is presented in an annual report which indicates whether the mitigation is successful and helps the mitigation design teams to continuously improve techniques.

- **Mitigation Banking**

Mitigation banking is an alternate method of compensating for unavoidable wetland impacts. Banking involves development of a wetland mitigation area before specific project impacts have been determined. The wetland bank then provides credits which can later be withdrawn by various projects in the vicinity.

- **Fish Passage Assessment & Enhancement**

WSDOT biologists work with the Department of Fish & Wildlife to identify and remedy fish passage barriers adjacent to state highw'ays. Barriers to upstream migration may be caused by improperly placed or sized culverts or by culverts that settle over time. As they are identified, these culverts are replaced or modified to better facilitate salmon spawning and rearing in upstream areas.

- **Wildlife Mortality (Deerkill) Database**

WSDOT maintenance crews submit data on deer and elk killed by traffic throughout the state. A WSDOT wildlife biologist compiles this data and makes recommendations about problem areas which may require the installation of warning signs, reflectors or wildlife undercrossings.

- **Environmental Research**

WSDOT biologists have developed a variety of research projects to improve our ability to protect the environment in an effective and cost-efficient manner. Past research has focused on topics such as wetland inventory and monitoring methods, effectiveness of deer reflectors, and re-establishing or expanding eelgrass beds at ferry terminals.

- **Interagency Coordination**

WSDOT biologists work with federal, state, local and tribal resource agencies to shape strategies that protect and enhance our natural resources. WSDOT biologists often contribute scientific knowledge and practical experience to interagency work groups or committees and also participate in watershed planning, public outreach and legislative initiatives.

- **Training**

Throughout the year, numerous training courses are provided to both internal (WSDOT) and external (local schools, technical gatherings, etc.) groups. WSDOT biologists present courses in wetland awareness, identification, and permitting issues, as well as in other aspects of environmental science such as riparian wildlife or threatened and endangered species.